17: PRE-EMPTIVE PRESCRIBING IN THE COMMUNITY

Rapid access to drugs in the community is important to avoid crises at home and to reduce unwanted or unnecessary admissions in the last days of life.[1–3] Both enteral and parenteral formulations of drugs to relieve pain, nausea and vomiting, breathlessness, noisy respiratory secretions ('death rattle'), restlessness/agitation, delirium and seizures, need to be available.[4,5] The Department of Health (London) recommends that generally patients should be able to receive needed medication at the same time and in the same place as the out-of-hours (OOH) consultation.[6] Ways of enabling this include:

- *Anticipatory prescribing:* encouraging prescribers to think ahead and prescribe extra medication to manage sudden changes in the patient's condition, or pro-actively prescribe injectable drugs commonly used at the end of life which are then available in the home on an 'if needed' basis.[1,7]
- *Just in case* boxes are standard boxes containing drugs specifically prescribed for the patient, and left in the home.[8,9] Examples of the use of *Just in case* boxes are readily available.[6,10] The boxes generally contain a small selection of injectable drugs in a tamper-proof box, the choice based on local guidelines for care in the last days of life. Additional emergency supplies may be indicated for selected patients, e.g. for someone with MND/ALS (see below)[11] or a *Crisis haemorrhage* pack for those at risk of a major haemorrhage.
- *Breathing Space* boxes (now known as *Just in Case* kits) are designed for patients with end-stage MND at risk of severe breathlessness, panic or choking. On request, the MND Association provides the box free of charge to the GP; it contains information for both the patient and the GP. The GP is asked to prescribe appropriate drugs, e.g. **midazolam**, **glycopyrronium**, **diamorphine**, and keep them in the box in the patient's home.[11]
- *Palliative care emergency* kits contain various drugs and equipment which can be carried in an OOH service provider's car; they generally include a wider range of drugs than in a *Just in case* box and also a syringe driver. To carry CDs they must able to demonstrate compliance with current Home Office regulations.[12]
- *Extended pharmacy schemes* are nominated community palliative care pharmacies which offer extended opening hours, and agree to carry an extended palliative care stock.

Examples of local practice are available in the document library on www.palliativedrugs.com, filed under medication issues (out of hours issues).

Just in case boxes

The Gold Standards Framework (GSF) recommends the following for a *Just in case* box:

- SC formulations for pain, nausea and vomiting, agitation/restlessness and death rattle (2mL syringes and needles)
- ± rectal diazepam
- local prescribing algorithms
- signed permissions for medication administration
- patient information.[3,9]

Typical injectable drugs include:

- **diamorphine, morphine** or **oxycodone** for pain
- **cyclizine, haloperidol** or **levomepromazine** for nausea and vomiting
- **midazolam** for agitation/restlessness
- **glycopyrronium, hyoscine *hydrobromide*** or **hyoscine *butylbromide*** for respiratory secretions.

Some boxes also include rectal **diazepam** or **lorazepam** tablets (for SL use).

A syringe driver may be left with the box.[6] WFI and a small sharps disposal container are also recommended.[10]

The cost of a *Just in case* box will depend on its contents, and how many amps of each drug are prescribed. Typically, a box will contain 2–5 amps of each injectable drug (Table 17.1).[8]

Table 17.1 Cost of *Just in case* drugs[13]

Drug	*Strength and form*	*Cost/amp*[a]
Diamorphine hydrochloride	5mg amp, powder for reconstitution	£3
	10mg amp, powder for reconstitution	£3.50
Morphine sulphate	10, 15, 20 and 30mg/mL; 1mL and 2mL amps	£1–1.50
Cyclizine	50mg/mL, 1mL amp	£1
Midazolam	2mg/mL, 5mL amp	£1
	5mg/mL, 2mL amp	£1
Hyoscine *hydrobromide*	400microgram/mL, 1mL amp	£3
	600microgram/mL, 1mL amp	£3
Glycopyrronium	200microgram/mL, 1mL amp	£1
	200microgram/mL, 3mL amp	£1
Diazepam rectal solution	5mg and 10mg rectal tube	£2

a. cost rounded up to nearest 50p.

If the patient is at risk of a crisis such as catastrophic haemorrhage, it is important to ensure that sufficient ampoules are provided to deal with this (should it occur), but not forgetting that non-drug measures are generally equally or more important.[14,15] If crisis medication is supplied (Table 17.2), it should be:

- readily available in the patient's home
- rapid in onset (2–5 min)
- already drawn up and kept in a fridge because there is rarely time to prepare an injection or calmly measure a SL dose
- if possible, given by the nearest carer, whether professional or informal (see p.609).

Table 17.2 Crisis drugs prepared in advance for a major haemorrhage in order of speed of onset

Drug	*Route*	*Dose*	*Speed of onset*
Midazolam	IV	10mg	2–3min (see p.141)
	IM	10mg	5–15min
Lorazepam	SL[a]	4mg (1mL)	5min (see p.146)
Midazolam	Buccal/SL[b]	10mg (1mL)[c]	15min (see p.141)

a. use the contents of an ampoule for injection
b. unlicensed buccal liquid 10mg/mL; available as a special order from Special Products Ltd; see Obtaining unlicensed products, p.769. Needs to be ordered in advance for an individual patient
c. if buccal liquid unavailable, midazolam injection can be used instead. However, this will increase the volume (10mg = 2mL of 5mg/mL injection), and this may be more than some patients can retain easily in their mouth.

The 'nearest carer' will generally be a family member or other informal carer. Thus, it is necessary to train such carers to give medication SL or by injection, whichever is the case (see p.609).

In catastrophic haemorrhage, the SC route is inappropriate because of likely peripheral shutdown and unpredictable absorption. IV is ideal but, failing that, it should be given IM (deltoid may be quicker than gluteal).[16,17]

Boxes should generally be stored in a cool, dry, low-access area. **Lorazepam** injection needs refrigeration.

Procedures need to be in place to ensure the security of the box during the acquisition process, while stored in the patient's home, and during return to the pharmacy after use. In order to

confirm that medication has not been unlawfully diverted, there must be an 'audit trail' documenting the ordering, dispensing and delivery of the drugs to the patient, and return of unused medication to the pharmacy.

A medication log included in the box can act as both an administration record and a stock balance sheet. The medication should be in a suitably robust container, fastened with a combination lock or a tamper-evident security tag. Unless specifically directed otherwise, it should be opened only by the community nurse who will be preparing the drugs for use by the patient/carer, or by a physician.

If the box is ordered before the last few days of life, there needs to be a robust procedure for reviewing the contents regularly, expiry dates, drug administration directions and medication doses as the patient's clinical condition changes. A prompt should be included in the box to ensure early medical review if any of the drugs are administered.[18] It is also essential that the patient and carer are told about:

- the contents of the emergency box
- the proper use of the medication, including training in the administration of SL/SC drugs when necessary (see p.609)
- who to contact in the event of an emergency.

The administration of emergency medication in a patient's home at the end of life carries a high risk for error. In order to avoid confusion at the time of use, concise, well-written and illustrated *patient and carer information material* should be included in the box.

Palliative care emergency kits for out-of-hours (OOH) services

The provision of and contents of palliative care emergency kits are dependent on the OOH service provider. The ideal is to 'keep it simple', i.e. to restrict the number of products to no more than 6–7. Some drugs will overlap OOH emergency medication needed in other clinical situations. Kits can be kept in the OOH provider's car, and also in OOH provider bases. Standardization across a geographical area is recommended, and helps staff to be familiar with what is available. A starting point is the National out-of-hours formulary palliative care core drug list:[19]

- **diamorphine** (injection)
- **cyclizine** (injection)
- **dexamethasone** (tablet)
- **hyoscine *butylbromide*** (injection)
- **ketorolac** or **diclofenac** (injection)
- **levomepromazine** (injection)
- **midazolam** (injection).

It is expected that these drugs will be part of a special locally available tamper-proof palliative care container. Local discussions will be necessary to determine optimum access. The quantities supplied should be enough to allow optimum symptom relief until formal review by the palliative care team or GP.

Other drugs useful in palliative care appear in other sections of the National out-of-hours Formulary:

- **haloperidol** and **diazepam** (oral and injectable) are under 'Psychiatric emergencies'
- antacids, **domperidone** (oral), **glycerol** suppositories, anti-spasmodic agents, **loperamide**, **metoclopramide** (injectable), **phosphate** enema and **prochlorperazine** (buccal) are under 'Gastro-intestinal'
- **codeine** (oral), **diamorphine** (injectable), a locally negotiated NSAID (oral and injectable) and **paracetamol** (oral) are under 'Analgesics'
- **naloxone** is in its own section for opioid overdose.

Local guidelines for the use of these drugs for palliative care, contact numbers for specialist advice, equipment to allow administration (including syringe drivers), and guidance on any local arrangements for rapid access to higher strengths of **diamorphine** or other injectable strong opioids should be included with the kit or be easily accessible, remembering the wide range of care settings an OOH service provider may cover.

Extended pharmacy schemes

These are generally PCT-commissioned, and involve networks of community pharmacies able to offer extended opening hours, and carrying a locally agreed palliative care stock list (Table 17.3) Some also agree to provide palliative care information, advice and an emergency contacts list for patients, carers and clinicians.[6]

Table 17.3 Lothian Community Pharmacy Palliative Care Networks Pan-Lothian Stock List October 2010[20]

Drug	*Form*	*Strength*	*Quantity stocked*
Alfentanil	Injection	1mg/2mL	1×10
Cyclizine	Injection	50mg/mL	2×5
Dexamethasone	Tablets	2mg	1×50
Dexamethasone (Organon)[a]	Injection	4mg/mL	1×10
Diamorphine hydrochloride	Injection	10mg	2×5
	Injection	30mg	2×5
	Injection	100mg	1×5
Diazepam	Rectal tubes	10mg/2.5mL	1×5
Fentanyl	TD patches	12microgram/h	1×5
	TD patches	25microgram/h	1×5
Glycopyrronium	Injection	200microgram/mL	1×10
Haloperidol	Injection	5mg/mL	2×5
Hyoscine *butylbromide* (Buscopan®)	Injection	20mg/mL	2×10
Hyoscine *hydrobromide*	Injection	400microgram/mL	1×10
Levomepromazine	Injection	25mg/mL	1×10
	Tablets[b]	6mg	1×28
Metoclopramide	Injection	10mg/2mL	2×12
Midazolam	Injection[c]	10mg/2mL	2×10
Morphine sulphate	Oral liquid	10mg/5mL	1×100mL
	Oral liquid	100mg/5mL	1×30mL
	Injection	10mg/mL	2×10
	Injection	30mg/mL	2×10
Morphine sulphate m/r (MST continus®)	Granules for oral suspension	30mg sachet	1×30
Oxycodone hydrochloride	Oral liquid	5mg/5mL	1×250mL
	Injection	20mg/2mL	1×5
Phenobarbital	Injection	200mg/mL	1×5
Sodium Chloride	Infusion	0.9%	20×500mL
WFI (10mL amps)	Injection	–	2×10

a. dexamethasone 4mg/mL refers specifically to the Organon product. The comparable Hospira product contains dexamethasone 3.3mg/mL

b. levomepromazine 6mg tablets are a named-patient product

c. the strength of midazolam stocked is 10mg/2mL; other strengths should not be used as they are too dilute for preparation of syringes for syringe drivers.

Achieving success

The success of any scheme will depend on generating and maintaining high levels of awareness across normal hours and OOH service providers. OOH service providers may employ large numbers of part-time staff working sporadic or infrequent shifts, covering the whole of emergency medicine, of which palliative care will be one small part. Straightforward up-to-date information about any local schemes for accessing drugs OOH needs to be integrated into induction and training sessions, any service handbooks, and be easily available at the point of need in service cars and at service bases.

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